

Applicant: Diederer
Application No: 10/553,103
Filed: November 14, 2005
Docket No.: 903-153 PCT/US/RCE
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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) Printing device for printing a substrate with a printing medium using the "drop-on-demand" principle, comprising a print head, which is arranged in such a manner that it can be moved to and fro substantially transversely with respect to the direction in which the substrate to be printed is conveyed and has at least one spray nozzle with an interacting piezoelectric element for generating and releasing a drop of the printing medium on demand by generating shockwaves in the printing medium to form said drop of the printing medium, the spray nozzle being in communication with a flexible working container, which is arranged at a fixed position, for degassed printing medium at a working height with respect to the spray nozzle which working height lies within a predetermined height range, in order to keep the pressure of the printing medium within a predetermined pressure range, wherein the working container is in communication with a releasable flexible reservoir for degassed printing medium and wherein the working container and the releasable flexible reservoir have an open connection between them such that during normal operation these form communicating vessels; and

~~wherein the open connection between the working container and the releasable flexible reservoir does not contain a pump.~~

wherein the printing device is provided with displacement means for moving the reservoir upwards with respect to the working container.

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2. (Previously Presented) Printing device according to claim 1, wherein the reservoir is positioned at a height difference above the working container.
3. (Canceled)
4. (Currently Amended) Printing device according to claim ~~[[3]]~~ 1, wherein the displacement means comprise support means, which can be tilted towards the working container, for supporting the reservoir.
5. (Previously Presented) Printing device according to claim 4, wherein the support means comprise a support plate, which can rotate about a rotation point located in the vicinity of the end which faces the working container, and at the opposite end is connected to counter-pressure means, and which in the horizontal position bears against supporting means.
6. (Previously Presented) Printing device according to claim 5, wherein there are signalling means for remote detection of tilting of the support plate.
7. (Previously Presented) Printing device according to claim 6, wherein the signalling means are connected to a switch, which is energized in the event of the support plate tilting.

8. (Previously Presented) Printing device according to claim 1, wherein the flexible reservoir is made from a metalized plastic film which is impervious to gas.

9. (Previously Presented) Printing device according to claim 1, wherein the reservoir has a height dimension and the working container has a height dimension, wherein the height dimension of the reservoir, in the completely filled state, is smaller than the height dimension of the working container.

10. (Previously Presented) Printing device according to claim 1, wherein the reservoir has a front surface and a rear surface, which are connected to one another along the periphery, an outlet opening with connecting means for coupling to the working container being provided in a peripheral part.

11. (Previously Presented) Printing device according to claim 10, wherein the peripheral part is shaped in such a manner that the inner wall of the reservoir has a gradual transition in the direction of the outlet opening.

12. (Previously Presented) Printing device according to claim 10, wherein the front surface of the reservoir has a length and a width, wherein the ratio of the length of the front surface of the reservoir to its width is greater than 2.5.

13-17. (Canceled)

18. (Previously Presented) Printing device according to claim 21, wherein the open connection between the working container and the releasable flexible reservoir does not contain a pump.

19. (Previously Presented) Printing device according to claim 1, wherein the open connection between the working container and the releasable flexible reservoir does not contain additional mechanical means during normal operation.

20. (Previously Presented) Printing device according to claim 1, wherein the degassed printing medium has a maximum oxygen concentration of about 1 mg/l.

21. (Currently Amended) Printing device for printing a substrate with a printing medium using the "drop-on-demand" principle, comprising a print head, which is arranged in such a manner that it can be moved to and fro substantially transversely with respect to the direction in which the substrate to be printed is conveyed and has at least one spray nozzle with an interacting piezoelectric element for generating and releasing a drop of the printing medium on demand by generating shockwaves in the printing medium to form said drop of the printing medium, the spray nozzle being in communication with a flexible working container, which is arranged at a fixed position, for degassed printing medium at a working height with respect to the spray nozzle which working height lies within a predetermined height range, in order to keep the pressure of

the printing medium within a predetermined pressure range, wherein the working container is in communication with a releasable flexible reservoir for degassed printing medium and wherein the working container and the releasable flexible reservoir have an open connection between them such that during normal operation these form communicating vessels;

wherein the degassed printing medium has a maximum oxygen concentration of about 1 mg/l; and

wherein the printing device is provided with displacement means for moving the reservoir upwards with respect to the working container.

22. (Previously Presented) Printing device according to claim 21, wherein the open connection between the working container and the releasable flexible reservoir does not contain additional mechanical means during normal operation.